Mines Branch Information Circular IC 167

BIBLIOGRAPHY OF HIGH-TEMPERATURE CONDENSED STATES RESEARCH PUBLISHED IN CANADA, JULY - SEPTEMBER, 1964

by

Norman F.H. Bright*

- - - -

SYNOPSIS

This report contains bibliographic information concerning research work on high-temperature condensed states published in Canadian journals during the period July to September, 1964.

---

* Head, Physical Chemistry Section, Mineral Sciences Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Canada.

Direction des mines

Circulaire d'information IC 167

BIBLIOGRAPHIE DES RECHERCHES EFFECTUÉES DANS LE DOMAINE DES ÉTATS CONDENSÉS AUX TEMPÉRATURES ÉLEVÉES, AU CANADA, DE JUILLET À SEPTEMBRE 1964

par

Norman F.H. Bright*

- - - -

RÉSUMÉ

Le présent rapport contient des renseignements bibliographiques sur les recherches effectuées sur les états condensés aux températures élevées, publiées dans les revues scientifiques canadiennes au cours de la période de juillet à septembre 1964.

---

* Chef, Section de la chimie physique, Division des sciences minérales, Direction des mines, ministère des Mines et des Relevés techniques, Ottawa, Canada.

CONTENTS

INTRODUCTION

This report is a further contribution to the series of bibliographic bulletins of information on high-temperature condensed states research that have been published as Mines Branch Information Circulars since March, 1960, on behalf of the Sub-Commission on Condensed States of the Commission on High Temperatures and Refractories of the International Union of Pure and Applied Chemistry. The present document covers work published in Canadian scientific and technical journals during the period July to September, 1964, inclusive.

Any further information concerning these bibliographies can be obtained from the writer of this report at the following address:

Dr. Norman F.H. Bright,
Mineral Sciences Division,
Mines Branch,
Department of Mines and Technical Surveys,
555 Booth Street,
Ottawa 4, Ontario, Canada.

Anyone not now receiving these reports who wishes to do so, or anyone who no longer finds them of interest is requested to advise the writer accordingly in order that the appropriate changes may be made in the mailing list.

The writer would very much appreciate being advised of any work published in Canadian journals, and lying within the scope of these bibliographies, that has escaped his notice, in order that such work may be mentioned in a subsequent issue of these Information Circulars.

BIBLIOGRAPHY OF WORK ON HIGH-TEMPERATURE CONDENSED STATES PUBLISHED IN CANADA, JULY - SEPTEMBER, 1964

International Union of Pure and Applied Chemistry
Commission on High-Temperatures and Refractories
Sub-Commission on Condensed States

Bibliography (July to September, 1964) for Canada

collected by Dr. Norman F. Bright, Mines Branch, Ottawa.

A. Devices for achieving temperatures above 1500°C

Nil

B. Devices for measuring and controlling temperatures above 1500°C

Nil

C. Devices for physical measurements at temperatures above 1000°C

Nil

D. Properties, at temperatures below 1000°C, of materials that melt above 1500°C

a. Metallic materials

1. Precipitation modes in hexagonal martensites.
W. G. Gallaugher, R. Taggart and D. H. Polonis (College of Engineering, University of Washington, Seattle, Washington, U. S. A.).
Canad. Met. Quarterly, 3 [2], 175-181 (1964).

b. Non-metallic materials

1. Coal research in Canada, 1963.
N. Berkowitz (Alberta Research Council, Edmonton, Alberta).
Canad. Min. Met. Bull., 57 [629], 956-958 (1964).

2. Correlation of adsorption equilibria of pure gases on activated carbon.
W. H. Cook and D. Basmadjian (Department of Chemical Engineering, University of Ottawa, Ottawa, Ontario).
Canad. Journ. Chem. Engg., 42, [4], 146-151 (1964).

3. Ranges of heavy ions in amorphous oxides.
B. Domeij, F. Brown, J.A. Davies and M. McCargo (Atomic Energy of Canada Limited, Chalk River, Ontario).
Canad. Journ. Phys., 42 [9], 1624-1634 (1964).

4. A thorium intermediate member of the britholite-apatite series.
M.R. Hughson and J.G. Sen Gupta (Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Mines Branch Research Report R 131, Department of Mines and Technical Surveys, Ottawa (September 8, 1964).
(Reprinted from Amer. Mineral., 49 [July/August], 937-951 (1964).

5. Refringence of garnets and hydrogarnets.
Duncan McConnell (Ohio State University, Columbus, Ohio, U.S.A.).
Canad. Mineral., 8 [1], 11-22 (1964).

c. Mixed materials

1. Analytical solutions of the equation of heat conduction for a non-homogeneous medium.
H.S. Heaps and R.D. Srivastava (Nova Scotia Technical College, Halifax, Nova Scotia).
Canad. Journ. Chem. Engg., 42 [3], 120-123 (1964).

E. Properties, at temperatures above 1000°C, of materials that melt above 1500°C

a. Metallic materials

1. Uranium in alloy steel
C.E. Makepeace (Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Mines Branch Research Report R 129, Department of Mines and Technical Surveys, Ottawa (July, 1964).

b. Non-metallic materials

1. Studies of basic copper and zinc carbonates. I: synthetic zinc carbonates and their relationship to hydrozincite.
J.L. Jambor (Geological Survey of Canada, Department of Mines and Technical Surveys, Ottawa, Ontario).
Canad. Mineral., 8 [1], 92-108 (1964).

2. Thermoelectric properties of cubic uranium monocompounds.
I.H. Warren and C.E. Price (Department of Metallurgy, University of British Columbia, Vancouver, B.C.).
Canad. Met. Quarterly, 3 [2], 183-196 (1964).

c. Mixed materials

Nil

F. Properties, at temperatures above 1000°C, of materials that melt below 1500°C

a. Metallic materials

1. Effect of temperature on the lattice parameters of some silver-palladium alloys.
C. Nagabhushana Rao and K. Krishna Rao (Atomic Energy Establishment, Trombay, Bombay, India).
Canad. Journ. Phys., 42 [7], 1336-1342 (1964).

2. Compounds of the type M_5X_2 : Pd_5As_2, Ni_5Si_2, and Ni_5P_2.
G.S. Saini, L.D. Calvert and J.B. Taylor (Division of Applied Chemistry, National Research Council of Canada, Ottawa, Ontario).
Canad. Journ. Chem., 42 [7], 1511-1517 (1964).

b. Non-metallic materials

1. Observations by X-ray diffraction on discoloured zinc oxide after heating.
E.A. Secco (St. Francis-Xavier University, Antigonish, Nova Scotia).
Canad. Journ. Chem., 42 [9], 2143-2147 (1964).

G. Phase equilibria

1. Production of potassium sulphate from naturally-occurring sodium sulphate and potassium chloride.
Brad Gunn (Saskatchewan Research Council, Saskatoon, Saskatchewan).
Canad. Journ. Chem. Engg. 42 [4], 187-190 (1964).

2. A new basic form for vapour pressure equations.
Raymond C. Hall (Kansas State University, Manhattan, Kansas, U.S.A.).
Canad. Journ. Chem. Engg. 42 [4], 152-154 (1964).

3. Diffusion in multi-component metallic systems. VIII : A kinetic calculation of the Onsager L coefficients in substitutional solid solution.
J.E. Lan and J.S. Kirkaldy (Department of Metallurgy and Metallurgical Engineering, McMaster University, Hamilton, Ontario).
Canad. Journ. Phys., 42, [9], 1643-1657 (1964).

H. Reactions at temperatures above 1000°C

1. Study of the fritting reaction of zircon sand with sodium hydroxide using differential thermal analysis and X-ray techniques.
Hyung Sup Choi and H. Cross (Eldorado Mining and Refining Limited, Ottawa, Ontario).
Canad. Min. Met. Bull., 57 [629], 966-972 (1964).

2. Activation energy calculation from a linearly-increasing temperature experiment.
T.R. Ingraham and P. Marier (Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Canad. Journ. Chem. Engg., 42 [4], 161-163 (1964).

3. On the anodic overvoltage in aluminum electrolyses.
Jomar Thonstad and Eirik Hove (Technical University of Norway, Trondheim, Norway).
Canad. Journ. Chem., 42 [7], 1542-1550 (1964).
